

# PATENT ABSTRACTS OF JAPAN

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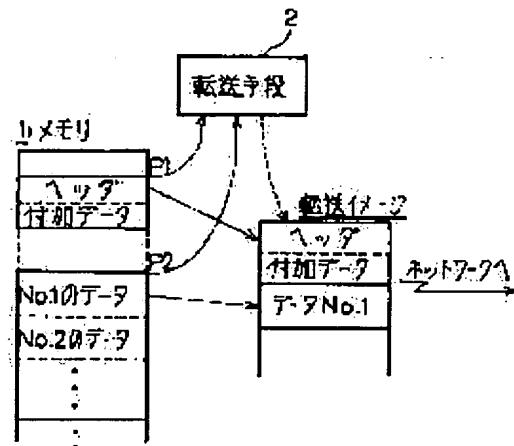
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## (54) DATA TRANSFER SYSTEM

### (57)Abstract:

**PURPOSE:** To eliminate unnecessary reading from and writing to a memory and to improve transfer speed by previously generating a header by writing dummy data so as to make an integral multiple of the number at the tail of 1st data.

**CONSTITUTION:** A transfer means 2 informed of the head address P1 of a header in a memory 1 and the head address of data reads the header and additional data (dummy data), written previously to an integral multiple of some number, out of the address P1 and transfers them to a network. Then the data are read out in blocks from the reported head address P2 of the data in the memory 1 while sectioned to an integral multiple of the certain number, and transferred to the network. Those are repeated to the end of the data. It is not necessary to read and write the data out and in the memory 1 to make blocks the integral multiple of the certain number like before, and the data can be transferred fast.



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301A

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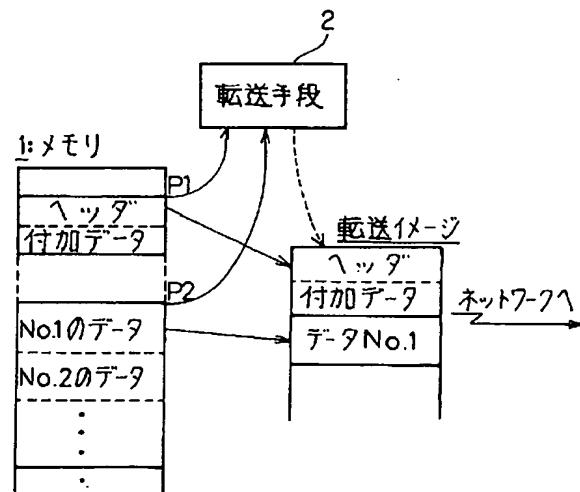
(54)【発明の名称】 データ転送システム

(57)【要約】

【目的】 本発明は、データがある数の整数倍にしチェックして転送するデータ転送システムに関し、第1のデータ（例えばヘッダ）の後部にある数の整数倍となるようにダミーデータを書き込んで作成し、この第1のデータと転送すべき第2のデータとをチェックして転送し、メモリ内で余分な読み書きの発生を無くし、転送速度の向上を図ることを目的とする。

【構成】 第1のデータの後部にある数の整数倍となるようにダミーデータを予め付加しておき、転送時にある数の整数倍のダミーデータの付加された第1のデータ、および第2のデータがある数の整数倍に区切ってチェックして転送する手段を備えるように構成する。

本発明の1実施例構成図



## 【特許請求の範囲】

【請求項1】データがある数の整数倍にしチェインして転送するデータ転送システムにおいて、

第1のデータの後部に当該第1のデータがある数の整数倍となるようにダミーデータを予め付加しておき、転送時にある数の整数倍のダミーデータの付加された第1のデータ、および第2のデータがある数の整数倍に区切ってチェインして転送する手段を備えたことを特徴とするデータ転送システム。

【請求項2】上記ダミーデータ中に転送しようとするデータ長を付加したことを特徴とする請求項1記載のデータ転送システム。

【請求項3】上記第1のデータをヘッダおよび第2のデータを転送しようとするデータとしたことを特徴とする請求項1あるいは請求項2記載のデータ転送システム。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】本発明は、データがある数の整数倍にしチェインして転送するデータ転送システムに関するものである。

【0002】ハードディスクなどの外部記憶装置に蓄積されたデータをネットワークを介して転送する場合、データの先頭にヘッダを付加してチェイニングを行う必要がある。このようなチェイニングが可能なネットワークのインタフェースチップなどにおいて、チェインされるデータの長さがある数の整数倍でないと動作しないという制限がある場合がある。この制限がある場合に、簡易かつ迅速にヘッダおよびデータのチェイニングを行うことが望まれている。

## 【0003】

【従来の技術】従来のチェイニングの様子を図4に示す。図4は、従来技術の説明図を示す。

【0004】まず、外部記憶装置であるディスク装置上のデータが一旦メモリ21の②のように連続して読み込んで格納する。その後、転送単位毎に、予めメモリ21の①の部分に書き込まれているヘッダを読み出して他のメモリ21の③の部分に書き込み、これに続けて、②の部分のデータを読み出して丁度、ある数（例えば48バイト）の整数倍となるように図中のデータNo.1の一部を書き込む。そして、ヘッダと残ったデータをある数の整数倍となるように分割しチェイニングして転送するようになっていた。

## 【0005】

【発明が解決しようとする課題】このため、ある数の整数倍のヘッダを作成する際に、ヘッダを読み出して他のメモリ上に書き込み、これに続けてデータの先頭から読み出して書き込んで、丁度ある数の整数倍としヘッダを作成した後、この作成したヘッダと、残りのデータをある数の整数倍に分割してチェイニングし、ネットワークを介して転送していたため、ヘッダを作成するためにメ

モリ内で読み出しと書き込みが発生してしまい、しかも、残りのデータついてある数の整数倍に分けてチェイニングをその都度行う必要があり、余分なメモリの読み書きなどが発生し、転送速度を低下させてしまうという問題がある。

【0006】本発明は、これらの問題を解決するため、第1のデータ（例えばヘッダ）の後部にある数の整数倍となるようにダミーデータを書き込んで予めヘッダを作成しておき、この第1のデータと転送すべき第2のデータとをチェイニングして転送し、メモリ内で余分な読み書きの発生を無くし、転送速度の向上を図ることを目的としている。

## 【0007】

【課題を解決するための手段】図1を参照して課題を解決するための手段を説明する。図1において、メモリ1は、転送しようとするヘッダやデータなどを格納するものである。

【0008】転送手段2は、メモリ1からヘッダおよびデータを取り出してネットワークを介して宛先に転送するものである。

## 【0009】

【作用】本発明は、図1に示すように、第1のデータであるヘッダの先頭アドレスP1および第2のデータである転送しようとするデータの先頭アドレスP2の通知に対応して、転送手段2が先頭アドレスP1からヘッダおよびある数の整数倍となるように予め付加されたダミーデータをまとめてブロックとしてネットワークに転送すると共に、続けて先頭アドレスP2からある数の整数倍となるようにブロックに分けてネットワークに転送するようしている。

【0010】この際、ヘッダ中のダミーデータに転送しようとするデータ長を付加し、転送するようにしている。また、第1のデータをヘッダおよび第2のデータを転送しようとするデータとし、転送するようにしている。

【0011】従って、第1のデータである例えばヘッダの後部にある数の整数倍となるようにダミーデータを書き込んで予め作成しておき、この第1のデータと転送すべき第2のデータをある数の整数倍となるように分割しチェイニングして転送することにより、従来のメモリ内で余分な読み書きなどの発生を無くし、転送速度を向上させることが可能となる。

## 【0012】

【実施例】次に、図1から図3を用いて本発明の実施例の構成および動作を順次詳細に説明する。

【0013】図1は、本発明の1実施例構成図を示す。図1において、メモリ1は、第1のデータであるヘッダおよび第2のデータである転送しようとするデータを格納しようとするものである。ここでは、アドレスP1からヘッダとこのヘッダに続けてある数の所定数倍となる

ように付加データを付加して格納する。また、アドレスP2から転送しようとするデータ（No.1, No.2...）を連続に格納する。

【0014】次に、データの転送時の動作を説明する。  
(1) メモリ1中のヘッダの先頭アドレスP1およびデータの先頭アドレスP2の通知を受けた転送手段2は、アドレスP1からヘッダおよびある数の整数倍となるように予め書き込まれた付加データ（ダミーデータ）を読み出し、図示転送イメージのようにネットワークに転送する。

【0015】(2) 続いて、通知を受けたメモリ1中のデータの先頭アドレスP2からデータがある数の整数倍となるように区切ってブロックとして読み出し、図示転送イメージのようにネットワークに転送することを、データが無くなるまで繰り返す。

【0016】以上によって、ヘッダおよびこのヘッダに統いて付加データがある数の整数倍となるように予め書き込まれているため、転送手段2はヘッダの先頭アドレスP1およびデータの先頭アドレスP2の通知を受けると、そのまま図示の転送イメージのにある数の整数倍のブロックにして順次ネットワークに転送でき、従来のメモリ1内である数の整数倍のブロックにするための読み書きが不要となり、高速にデータ転送することが可能となる。

【0017】図2は、本発明のシステムブロック図を示す。図2において、外部記憶装置11は、磁気ディスク装置などの外部記憶装置であって、ネットワークに転送しようとするデータを格納するものである。

【0018】データI/O部12は、後述する図3に記載するように、ヘッダ生成部16で生成したヘッダおよびこのヘッダに統けてある数の整数倍となるように付加データをメモリ1中に書き込んだり、外部記憶装置11から読み出したデータをメモリ1中の連続領域に書き込んだりするものである。

【0019】送信部13は、メモリ1からヘッダおよびデータをブロック（ある数の整数倍に区切ったデータ）毎に読み出してネットワークに送信するものである。ネットワーク14は、送信部13から送信されたデータ（パケット、フレームなど）を宛先に転送する網である。

【0020】受信部15は、ネットワーク14を介して送信されてきたヘッダおよびデータを受信し、データを取り出して応用プログラムなどに渡すものである。次に、図3の説明図の順番に従い、図1および図2の構成の動作を詳細に説明する。

【0021】図3は、本発明の動作説明図を示す。ここで、データI/O部12、送信部13、受信部15、およびヘッダ生成部16は、図2の同一番号のものと同一である。

【0022】図3において、S1は、ヘッダを生成す

る。S2は、データ長を付加する。これは、S1で生成したヘッダに付加データを丁度、ある数（例えば48バイト）の整数倍となるように付加する。

【0023】S3は、メモリに書き込む。これは、S1およびS2で作成したヘッダおよび付加データをある数の整数倍にしたもの、例えば図1のメモリ1中にある数の整数倍としたヘッダおよび付加データを図示のように書き込む。

【0024】S4は、データを読み込む。これは、外部記憶装置11から送信しようとするデータを読み込む。S5は、メモリに書き込む。これは、S4で外部記憶装置11から読み込んだデータを、例えば図1のメモリ1中の連続した領域に“No.1のデータ”、“No.2のデータ”というように順次書き込む。

【0025】S6は、ヘッダ部のポインタを通知する。これは、S3でメモリ1に書き込んだヘッダおよび付加データの先頭アドレスP1を送信部13に通知する。S7は、データ部のポインタを通知する。これは、S5でメモリ1に書き込んだデータの先頭アドレスP2を送信部13に通知する。

【0026】以上によって、データI/O部12が指定された宛先に指定されたデータの転送指示を受けた場合に、ヘッダ生成部16が生成した指定された宛先などからなるヘッダにある数の整数倍となるように付加データを付加してメモリ1に書き込むと共に、外部記憶装置11から指定されたデータを読み出してメモリ1に書き込む。そして、ヘッダおよび付加データの先頭アドレスP1およびデータの先頭アドレスP2を送信部13に通知して送信依頼する。これらにより、外部記憶装置11から読み出したヘッダおよびデータをもとに、メモリ1上に読み書きの回数を最小限にして書き込み、送信準備が完了したこととなる。

【0027】S8は、送信部13がヘッダ/データを送信する。これは、S6およびS7で通知を受けたヘッダ部のポインタ（先頭アドレスP1）およびデータ部のポインタ（先頭アドレスP2）からそれぞれヘッダ（ヘッダ+付加データ）およびデータを順次ネットワークに送信する。

【0028】S9は、S8で送信されたヘッダを受信部15が受信する。S10は、データを受信する。これは、S9でヘッダを受信したことにより、データを受信する。

【0029】S11は、受信データ長=データ長か判別する。これは、受信した受信データ長がヘッダに設定されたデータ長と等しいか判別する。YESの場合には、全てのデータの受信済みと判明したので、一連の処理を終了する。一方、NOの場合には、未だ受信していないデータがあると判明したので、S10に戻り、データ受信を繰り返す。

【0030】本実施例においては、ヘッダとデータをメ

モリ 1 に格納するとしたが、別々のメモリに格納してもよい。

## 【0031】

【発明の効果】以上説明したように、本発明によれば、第1のデータ（例えばヘッダ）の後部にある数の整数倍となるように付加データを書き込んでおき、この第1のデータと転送すべき第2のデータを分割しチェックイングして転送する構成を採用しているため、従来のメモリ内で余分な読み書きの発生を無くし、転送速度の向上を図ることができる。

## 【図面の簡単な説明】

【図1】本発明の1実施例構成図である。

\* 【図2】本発明のシステムブロック図である。

【図3】本発明の動作説明図である。

【図4】従来技術の説明図である。

## 【符号の説明】

1 : メモリ

2 : 転送手段

11 : 外部記憶装置

12 : データ I/O 部

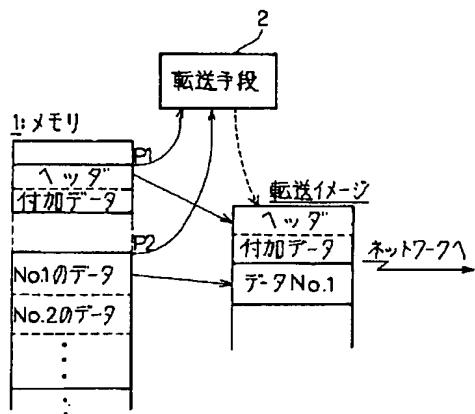
13 : 送信部

10 14 : ネットワーク

15 : 受信部

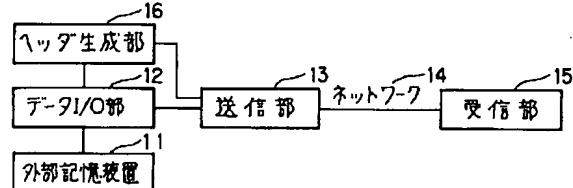
【図1】

本発明の1実施例構成図



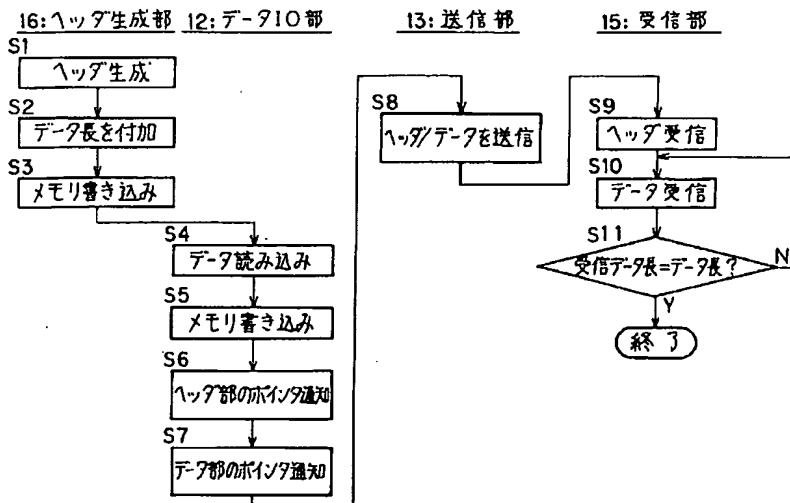
【図2】

本発明のシステムブロック図



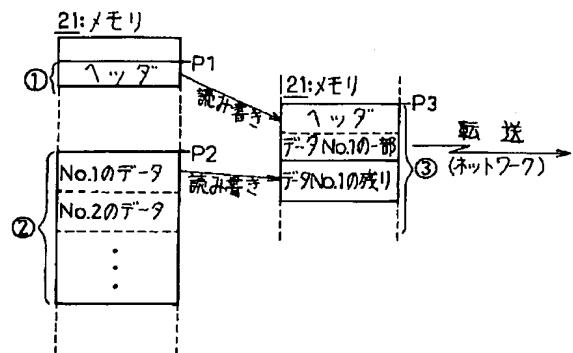
【図3】

本発明の動作説明図



【図4】

## 従来技術の説明図



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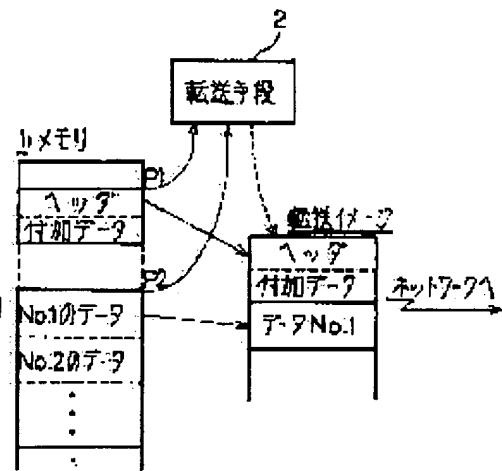
## (54) DATA TRANSFER SYSTEM

### (57)Abstract:

**PURPOSE:** To eliminate unnecessary reading from and writing to a memory and to improve transfer speed by previously generating a header by writing dummy data so as to make an integral multiple of the number at the tail of 1st data.

**CONSTITUTION:** A transfer means 2 informed of the head address P1 of a header in a memory 1 and the head address of data reads the header and additional data (dummy data), written previously to an integral multiple of some number, out of the address P1 and transfers them to a network.

Then the data are read out in blocks from the reported head address P2 of the data in the memory 1 while sectioned to an integral multiple of the certain number, and transferred to the network. Those are repeated to the end of the data. It is not necessary to read and write the data out and in the memory 1 to make blocks the integral multiple of the certain number like before, and the data can be transferred fast.



**\* NOTICES \***

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- 3.In the drawings, any words are not translated.

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**CLAIMS**

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**[Claim(s)]**

[Claim 1]In a data transfer system which makes data an integral multiple of a certain number, chains it, and transmits it, Dummy data is beforehand added so that it may become a number of integral multiples which have the 1st data concerned in the rear of the 1st data, A data transfer system provided with a means to divide into an integral multiple of a certain number the 1st data in which dummy data of a number of integral multiples which exist at the time of transmission was added, and the 2nd data, to chain them, and to transmit them.

[Claim 2]The data transfer system according to claim 1 adding data length which it is going to transmit in the above-mentioned dummy data.

[Claim 3]Claim 1 using the 1st data of the above as data which is going to transmit a header and the 2nd data, or the data transfer system according to claim 2.

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[Translation done.]

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**DETAILED DESCRIPTION****[Detailed Description of the Invention]****[0001]**

[Industrial Application]This invention makes data the integral multiple of a certain number, and relates to the data transfer system chained and transmitted.

[0002]When transmitting the data stored in external storages, such as a hard disk, via a network, it is necessary to add a header to the head of data and to perform chaining. In the interface chip etc. of the network in which such chaining is possible, there may be restriction of not operating unless it is a number with the length of the data chained of integral multiples. When there is this restriction, to perform chaining of a header and data simply and promptly is desired.

**[0003]**

[Description of the Prior Art]The situation of the conventional chaining is shown in drawing 4. Drawing 4 shows the explanatory view of conventional technology.

[0004]First, the data on the disk unit which is an external storage once reads continuously like \*\* of the memory 21, and stores. Then, read the header currently beforehand written in the portion of \*\* of the memory 21 for every transfer unit, and it writes in the portion of \*\* of other memories 21, A part of data No.1 in a figure is written in so that the data of the portion of \*\* may be read and it may become an integral multiple of a certain number (for example, 48 bytes) exactly after this. And he divides and carries out chaining and was trying to transmit a header and the remaining data so that it may become an integral multiple of a certain number.

**[0005]**

[Problem(s) to be Solved by the Invention]For this reason, when creating the header of the integral multiple of a certain number, read a header and write in on other memories, and read from the head of data after this and it writes in, Since the remaining data was divided into the integral multiple of a certain number, chaining was carried out to this created header and it had transmitted via the network, after considering it as the integral multiple of a certain number exactly and creating a header, In order to create a header, read-out and writing occur within a memory, moreover it is necessary to divide into the integral multiple of the remaining numbers of data \*\*\*\*\*, and to perform chaining each time, reading and writing of an excessive memory, etc. occur, and there is a problem of reducing a transfer rate.

[0006]This invention writes in dummy data and creates the header beforehand so that it may become a number at the rear of the 1st data (for example, header) of integral multiples, in order to solve these problems, Chaining of this 1st data and the 2nd data that should be transmitted is carried out, it is transmitted, generating of excessive reading and writing is lost within a memory, and it aims at aiming at improvement in a transfer rate.

**[0007]**

[Means for Solving the Problem]With reference to drawing 1, The means for solving a technical problem is explained. In drawing 1, the memory 1 stores a header, data, etc. which it is going to

transmit.

[0008]The transfer means 2 takes out a header and data from the memory 1, and transmits them to an address via a network.

[0009]

[Function]This invention corresponds to the notice of the start address P2 of the data which is the start address P1 and the 2nd data of a header which are the 1st data and which it is going to transmit, as shown in drawing 1. Transmit collectively the dummy data added beforehand to a network as a block so that the transfer means 2 may serve as an integral multiple of a header and a certain number from the start address P1, and He divides into a block and is trying to transmit to a network so that it may become an integral multiple of a certain number from the start address P2 continuously.

[0010]Under the present circumstances, he adds the data length which it is going to transmit to the dummy data in a header, and is trying to transmit. He uses the 1st data as the data which is going to transmit a header and the 2nd data, and is trying to transmit it.

[0011]Therefore, write in DAMIDETA and it creates beforehand so that it may become a number which is the 1st data of integral multiples which are in the rear of a header, for example, By dividing and carrying out chaining and transmitting this 1st data and the 2nd data that should be transmitted so that it may become an integral multiple of a certain number, generating of excessive reading and writing etc. is lost within the conventional memory, and it becomes possible to raise a transfer rate.

[0012]

[Example]Next, the composition and operation of the example of this invention are explained to details one by one using drawing 3 from drawing 1.

[0013]Drawing 1 shows 1 example lineblock diagram of this invention. In drawing 1, the memory 1 tends to store the data which is the header and the 2nd data which are the 1st data and which it is going to transmit. Here, attached data is added and stored so that it may become a number of predetermined number twice currently continued to a header and this header from the address P1. The data (No.1, No.2 ...) which it is going to transmit from the address P2 is stored in continuation.

[0014]Next, the operation at the time of a data transfer is explained.

(1) The transfer means 2 which received the notice of the start address P1 of the header in the memory 1, and the start address P2 of data, The attached data (dummy data) written in beforehand is read so that it may become an integral multiple of a header and a certain number from the address P1, and it transmits to a network like a graphic display transmission image.

[0015](2) Then, divide so that it may become an integral multiple of a certain number from the start address P2 of the data in the memory 1 which received the notice about data, read as a block, and repeat until data is lost [ transmitting to a network like a graphic display transmission image, and ].

[0016]Since it is beforehand written in so that it may become a number of integral multiples which have attached data following a header and this header by the above, If the notice of the start address P1 of a header and the start address P2 of data is received, the transfer means 2, The block of the integral multiple of a certain number is then used like the transmission image of a graphic display, it can transmit to a network one by one, the reading and writing for using the block of the integral multiple of the number which is in the conventional memory 1 become unnecessary, and it becomes possible to carry out data transfer at high speed.

[0017]Drawing 2 shows the system block figure of this invention. In drawing 2, the external storages 11 are external storages, such as a magnetic disk drive, and store the data which it is going to transmit to a network.

[0018]The data I/O part 12 writes in attached data into the memory 1 so that it may indicate to drawing 3 mentioned later and may become a number of integral multiples currently continued to the header generated by the header generating part 16, and this header, or, The data read from the external storage 11 is written in the continuation field in the memory 1.

[0019]The transmission section 13 reads a header and data from the memory 1 to every block (data

divided into the integral multiple of a certain number), and transmits to a network. The network 14 is a net which transmits the data (a packet, a frame, etc.) transmitted from the transmission section 13 to an address.

[0020]The receive section 15 receives the header and data which have been transmitted via the network 14, takes out data, and hands an application program etc. Next, according to the turn of the explanatory view of drawing 3, operation of the composition of drawing 1 and drawing 2 is explained in detail.

[0021]Drawing 3 shows the explanatory view of this invention of operation. Here, the data I/O part 12, the transmission section 13, the receive section 15, and the header generating part 16 are the same as that of the thing of the same number of drawing 2.

[0022]In drawing 3, S1 generates a header. S2 adds data length. Exactly, this adds attached data to the header generated by S1 so that it may become an integral multiple of a certain number (for example, 48 bytes).

[0023]S3 is written in a memory. This is written in like a graphic display of the header and attached data which made what made the header and attached data which were created by S1 and S2 the integral multiple of a certain number a number of integral multiples which are, for example in the memory 1 of drawing 1.

[0024]S4 reads data. This reads the data which it is going to transmit from the external storage 11. S5 is written in a memory. This writes the data read from the external storage 11 by S4 one by one like "the data of No.1", and "the data of No.2", for example in the continuous field in the memory 1 of drawing 1.

[0025]S6 notifies the pointer of a header unit. This notifies the transmission section 13 of the start address P1 of the header written in the memory 1 by S3, and attached data. S7 notifies the pointer of a data division. This notifies the transmission section 13 of the start address P2 of the data written in the memory 1 by S5.

[0026]When the data transfer directions specified as the address as which the data I/O part 12 was specified by the above are received, Add attached data and it writes in the memory 1 so that it may become a number in the header which consists of an address etc. which the header generating part 16 generated, and which were specified of integral multiples, and the data specified from the external storage 11 is read, and it writes in the memory 1. And the transmission section 13 is notified of the start address P1 of a header and attached data, and the start address P2 of data, and a transmission request is carried out. It means that the number of times of reading and writing is made into the minimum, and is written in on the memory 1 by these based on the header and data which were read from the external storage 11, and transmitting preparation was completed.

[0027]S8, the transmission section 13 transmits a header/data. This transmits a header (header + attached data) and data to a network one by one, respectively from the pointer (start address P1) of a header unit and the pointer (start address P2) of a data division which received the notice by S6 and S7.

[0028]The receive section 15 receives the header to which S9 was transmitted by S8. S10 receives data. This receives data after having received the header by S9.

[0029]S11 is distinguished in received-data length = data length. This distinguishes whether the received-data length which received is equal to the data length set as the header. Since finishing [reception of all the data] was turned out in YES, a series of processings are ended. Since it became clear that there is data which has not yet been received on the other hand in NO, it returns to S10 and data receiving is repeated.

[0030]In this example, although a header and data are stored in the memory 1, it may store in a separate memory.

[0031]

[Effect of the Invention]Attached data is written in so that it may become a number at the rear of the 1st data (for example, header) of integral multiples according to this invention, as explained

above, Since the composition which divides and carries out chaining of this 1st data and the 2nd data that should be transmitted, and transmits it is adopted, generating of excessive reading and writing can be eliminated within the conventional memory, and improvement in a transfer rate can be aimed at.

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[Translation done.]

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**TECHNICAL FIELD**

[Industrial Application] This invention makes data the integral multiple of a certain number, and relates to the data transfer system chained and transmitted.

[0002] When transmitting the data stored in external storages, such as a hard disk, via a network, it is necessary to add a header to the head of data and to perform chaining. In the interface chip etc. of the network in which such chaining is possible, there may be restriction of not operating unless it is a number with the length of the data chained of integral multiples. When there is this restriction, to perform chaining of a header and data simply and promptly is desired.

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**PRIOR ART**

[Description of the Prior Art] The situation of the conventional chaining is shown in drawing 4. Drawing 4 shows the explanatory view of conventional technology.

[0004] First, the data on the disk unit which is an external storage once reads continuously like \*\* of the memory 21, and stores. Then, read the header currently beforehand written in the portion of \*\* of the memory 21 for every transfer unit, and it writes in the portion of \*\* of other memories 21. A part of data No.1 in a figure is written in so that the data of the portion of \*\* may be read and it may become an integral multiple of a certain number (for example, 48 bytes) exactly after this. And he divides and carries out chaining and was trying to transmit a header and the remaining data so that it may become an integral multiple of a certain number.

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**EFFECT OF THE INVENTION**

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[Effect of the Invention]Attached data is written in so that it may become a number at the rear of the 1st data (for example, header) of integral multiples according to this invention, as explained above, Since the composition which divides and carries out chaining of this 1st data and the 2nd data that should be transmitted, and transmits it is adopted, generating of excessive reading and writing can be eliminated within the conventional memory, and improvement in a transfer rate can be aimed at.

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**TECHNICAL PROBLEM**

[Problem(s) to be Solved by the Invention] For this reason, when creating the header of the integral multiple of a certain number, read a header and write in on other memories, and read from the head of data after this and it writes in. Since the remaining data was divided into the integral multiple of a certain number, chaining was carried out to this created header and it had transmitted via the network, after considering it as the integral multiple of a certain number exactly and creating a header. In order to create a header, read-out and writing occur within a memory, moreover it is necessary to divide into the integral multiple of the remaining numbers of data \*\*\*\*\*, and to perform chaining each time, reading and writing of an excessive memory, etc. occur, and there is a problem of reducing a transfer rate.

[0006] This invention writes in dummy data and creates the header beforehand so that it may become a number at the rear of the 1st data (for example, header) of integral multiples, in order to solve these problems. Chaining of this 1st data and the 2nd data that should be transmitted is carried out, it is transmitted, generating of excessive reading and writing is lost within a memory, and it aims at aiming at improvement in a transfer rate.

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**MEANS**

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[Means for Solving the Problem]With reference to drawing 1, The means for solving a technical problem is explained. In drawing 1, the memory 1 stores a header, data, etc. which it is going to transmit.

[0008]The transfer means 2 takes out a header and data from the memory 1, and transmits them to an address via a network.

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**OPERATION**

[Function] This invention corresponds to the notice of the start address P2 of the data which is the start address P1 and the 2nd data of a header which are the 1st data and which it is going to transmit, as shown in drawing 1, Transmit collectively the dummy data added beforehand to a network as a block so that the transfer means 2 may serve as an integral multiple of a header and a certain number from the start address P1, and He divides into a block and is trying to transmit to a network so that it may become an integral multiple of a certain number from the start address P2 continuously.

[0010] Under the present circumstances, he adds the data length which it is going to transmit to the dummy data in a header, and is trying to transmit. He uses the 1st data as the data which is going to transmit a header and the 2nd data, and is trying to transmit it.

[0011] Therefore, write in DAMIDETA and it creates beforehand so that it may become a number which is the 1st data of integral multiples which are in the rear of a header, for example, By dividing and carrying out chaining and transmitting this 1st data and the 2nd data that should be transmitted so that it may become an integral multiple of a certain number, generating of excessive reading and writing etc. is lost within the conventional memory, and it becomes possible to raise a transfer rate.

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**EXAMPLE**

[Example]Next, the composition and operation of the example of this invention are explained to details one by one using drawing 3 from drawing 1.

[0013]Drawing 1 shows 1 example lineblock diagram of this invention. In drawing 1, the memory 1 tends to store the data which is the header and the 2nd data which are the 1st data and which it is going to transmit. Here, attached data is added and stored so that it may become a number of predetermined number twice currently continued to a header and this header from the address P1. The data (No.1, No.2---) which it is going to transmit from the address P2 is stored in continuation.

[0014]Next, the operation at the time of a data transfer is explained.

(1) The transfer means 2 which received the notice of the start address P1 of the header in the memory 1, and the start address P2 of data, The attached data (dummy data) written in beforehand is read so that it may become an integral multiple of a header and a certain number from the address P1, and it transmits to a network like a graphic display transmission image.

[0015](2) Then, divide so that it may become an integral multiple of a certain number from the start address P2 of the data in the memory 1 which received the notice about data, read as a block, and repeat until data is lost [ transmitting to a network like a graphic display transmission image, and ].

[0016]Since it is beforehand written in so that it may become a number of integral multiples which have attached data following a header and this header by the above, If the notice of the start address P1 of a header and the start address P2 of data is received, the transfer means 2, The block of the integral multiple of a certain number is then used like the transmission image of a graphic display, it can transmit to a network one by one, the reading and writing for using the block of the integral multiple of the number which is in the conventional memory 1 become unnecessary, and it becomes possible to carry out data transfer at high speed.

[0017]Drawing 2 shows the system block figure of this invention. In drawing 2, the external storages 11 are external storages, such as a magnetic disk drive, and store the data which it is going to transmit to a network.

[0018]The data I/O part 12 writes in attached data into the memory 1 so that it may indicate to drawing 3 mentioned later and may become a number of integral multiples currently continued to the header generated by the header generating part 16, and this header, or, The data read from the external storage 11 is written in the continuation field in the memory 1.

[0019]The transmission section 13 reads a header and data from the memory 1 to every block (data divided into the integral multiple of a certain number), and transmits to a network. The network 14 is a net which transmits the data (a packet, a frame, etc.) transmitted from the transmission section 13 to an address.

[0020]The receive section 15 receives the header and data which have been transmitted via the network 14, takes out data, and hands an application program etc. Next, according to the turn of the explanatory view of drawing 3, operation of the composition of drawing 1 and drawing 2 is explained in detail.

[0021] Drawing 3 shows the explanatory view of this invention of operation. Here, the data I/O part 12, the transmission section 13, the receive section 15, and the header generating part 16 are the same as that of the thing of the same number of drawing 2.

[0022] In drawing 3, S1 generates a header. S2 adds data length. Exactly, this adds attached data to the header generated by S1 so that it may become an integral multiple of a certain number (for example, 48 bytes).

[0023] S3 is written in a memory. This is written in like a graphic display of the header and attached data which made what made the header and attached data which were created by S1 and S2 the integral multiple of a certain number a number of integral multiples which are, for example in the memory 1 of drawing 1.

[0024] S4 reads data. This reads the data which it is going to transmit from the external storage 11. S5 is written in a memory. This writes the data read from the external storage 11 by S4 one by one like "the data of No.1", and "the data of No.2", for example in the continuous field in the memory 1 of drawing 1.

[0025] S6 notifies the pointer of a header unit. This notifies the transmission section 13 of the start address P1 of the header written in the memory 1 by S3, and attached data. S7 notifies the pointer of a data division. This notifies the transmission section 13 of the start address P2 of the data written in the memory 1 by S5.

[0026] When the data transfer directions specified as the address as which the data I/O part 12 was specified by the above are received, Add attached data and it writes in the memory 1 so that it may become a number in the header which consists of an address etc. which the header generating part 16 generated, and which were specified of integral multiples, and the data specified from the external storage 11 is read, and it writes in the memory 1. And the transmission section 13 is notified of the start address P1 of a header and attached data, and the start address P2 of data, and a transmission request is carried out. It means that the number of times of reading and writing is made into the minimum, and is written in on the memory 1 by these based on the header and data which were read from the external storage 11, and transmitting preparation was completed.

[0027] S8, the transmission section 13 transmits a header/data. This transmits a header (header + attached data) and data to a network one by one, respectively from the pointer (start address P1) of a header unit and the pointer (start address P2) of a data division which received the notice by S6 and S7.

[0028] The receive section 15 receives the header to which S9 was transmitted by S8. S10 receives data. This receives data after having received the header by S9.

[0029] S11 is distinguished in received-data length = data length. This distinguishes whether the received-data length which received is equal to the data length set as the header. Since finishing [reception of all the data] was turned out in YES, a series of processings are ended. Since it became clear that there is data which has not yet been received on the other hand in NO, it returns to S10 and data receiving is repeated.

[0030] In this example, although a header and data are stored in the memory 1, it may store in a separate memory.

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**DESCRIPTION OF DRAWINGS****[Brief Description of the Drawings]**

[Drawing 1] It is 1 example lineblock diagram of this invention.

[Drawing 2] It is a system block figure of this invention.

[Drawing 3] It is an explanatory view of this invention of operation.

[Drawing 4] It is an explanatory view of conventional technology.

**[Description of Notations]**

- 1: Memory
- 2: Transfer means
- 11: External storage
- 12: Data I/O part
- 13: Transmission section
- 14: Network
- 15: Receive section

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[Translation done.]

## \* NOTICES \*

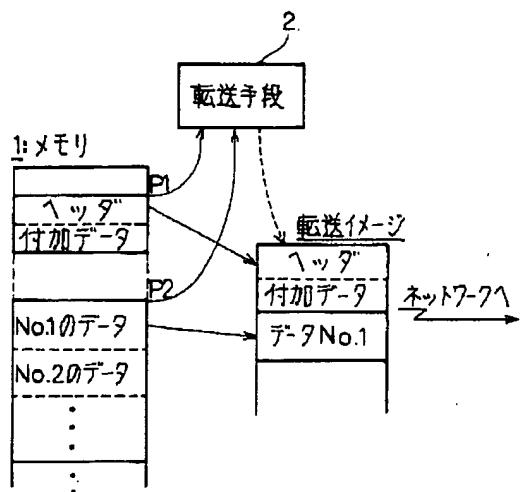
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## DRAWINGS

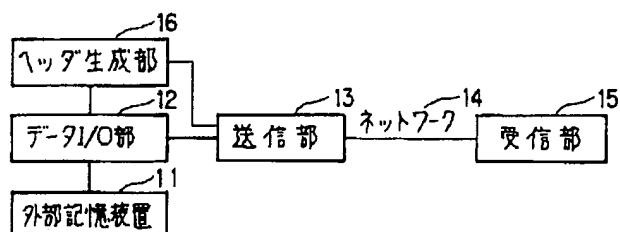
## [Drawing 1]

本発明の1実施例構成図



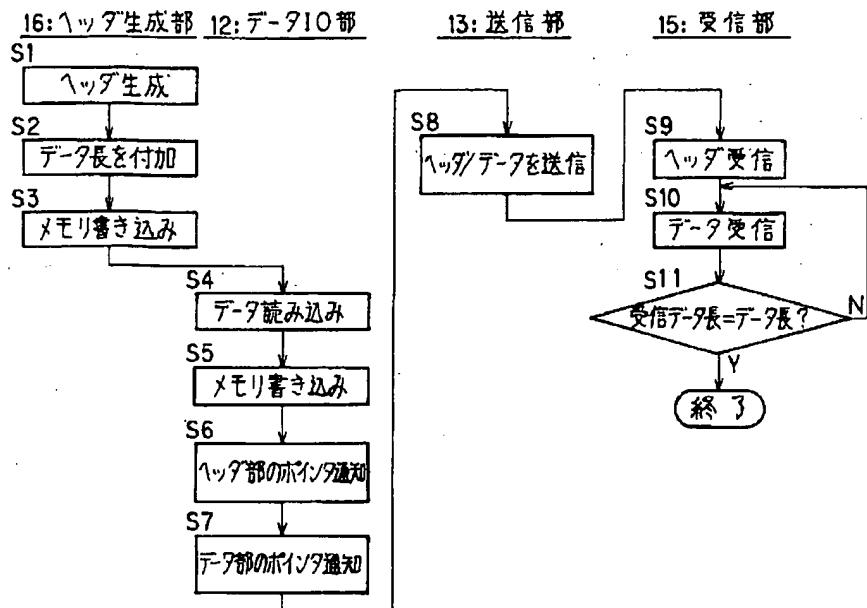
## [Drawing 2]

本発明のシステムアロック図



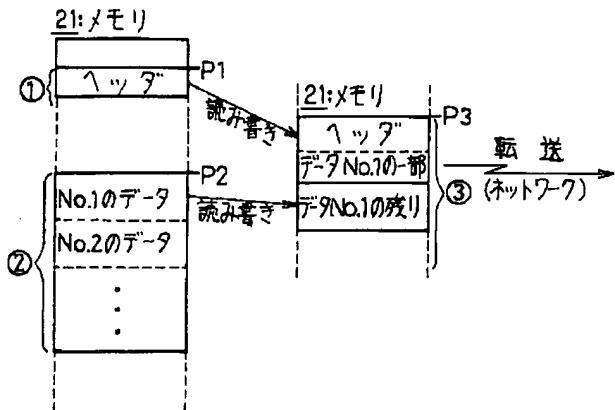
## [Drawing 3]

## 本発明の動作説明図



[Drawing 4]

## 従来技術の説明図



[Translation done.]